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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 33794 | 7590 | 08/30/2007 | EXAMINER | |
| MATTHIAS SCHOLL 14781 MEMORIAL DRIVE SUITE 1319 HOUSTON, TX 77079 | | | NGUYEN, HAU H | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2628 | |
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| | | | 08/30/2007 | ELECTRONIC |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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|------------------------------|--------------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 10/518,650 | Applicant(s) WROBEL, PAWEL | |
| | Examiner Hau H. Nguyen | Art Unit 2628 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 3-7 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 8-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>7/27/2005</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-2, 8-10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 1 contains the features “creating one set from all subsets of data...” and “successively creating sets of data from the subsets of data...” In the first limitation, one set has been created from all subsets of data, therefore, other “sets” cannot be successively created from subsets of data, since the first set already includes all the subsets.

The following rejections is based upon interpretations that are best understood by the examiner.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 2628

4. Claims 1, 2, 8-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Schoner et al. (U.S. Patent No. 5,926,227).

As per claim 1, Schoner teaches a method for memory allocation for images comprising the following steps:

dividing an image into lines (*horizontal rows of macro-blocks*, col. 8, lines 58-67);

forming separate subsets of data, each subset of data comprising one line (*thus, one subset is equal to one row of macro-block*);

creating one set from all subsets of data when the size of at least one of free segments of operating memory is at least equal to the size of all subsets of data (such as creating one field of a frame image, see Fig. 4, and col. 9 line 30 through col. 10, line 14);

successively creating sets of data from the subsets of data, the sets having the size not larger than the size of free segments of operating memory (reasons given in the 112 1st rejection above); and

allocating each created set of data in operating memory until data describing the whole image is allocated in the operating memory (*i.e. allocating memory until end of field tokens is detected*).

As per claim 2, as cited above, Schoner teach the set of data are created from the subsets of data describing consecutive lines of the image (see description of Fig. 4).

As per claim 8, Schoner also teach each line is assigned a number (as shown in Fig. 4).

As per claim 9, as shown in Fig. 3, Schoner further teach simultaneously with allocating, a table of pointers to individual lines is filled (*i.e. buffer 116*, col. 9, lines 17-29).

As per claim 10, since Schoner teach storing the lines of images (even and odd) in the assigned memory segment indicated by the segment register 120, it is implied that the table of pointers to individual lines comprises the memory address of each line of the image (otherwise, the system does not know where to store the image in the memory 102).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 11-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schoner et al. (U.S. Patent No. 5,926,227) in view of McMahon et al. (U.S. Patent No. 5,784,699).

As per claim 11, as cited above, Schoner teach a method for memory allocation for images, comprising the steps of:

while storing the data describing an image in operating memory

dividing the image into lines, each line being described by a separate subset of data (cited above);

creating at least one set of data from the subsets of data which have not been allocated in operating memory yet, and allocating each set of data in a separate free segment of operating memory until data describing the whole image is allocated in operating memory (cited above);
and

while reading the image, reading consecutive lines from the operating memory until the whole image is read (by the display processor, col. 6, lines 13-16).

Schoner fails to teach “*the size of each successive set of data is not larger than the size of the set of data created before it and the size of the largest free segment of the operating memory at the time of creating the set of data.*” However, this is what McMahon teaches. McMahon teach a method of dynamic memory allocation, wherein as shown in Figs. 1 and 2, the dynamic memory allocator 50 allocates the largest free segment in the memory to the memory request (step 140/150), and assign the largest available memory to the request (see col. 5, lines 22-56). It should be contemplated that since the largest available memory is assigned to the memory request to a first set of data, the size of the successive memory requests is therefore not larger than the size of the first set of data.

Therefore, it would have been obvious to one skilled in the art to utilize the method of dynamically allocating memory as taught by McMahon in combination with the method as taught by Schoner in order to reduce the time and resources required to search for the free segments in memory (col. 6, lines 51-64), and thereby improving overall system performance.

As per claim 12, although not explicitly disclosed in Schoner, McMahon, as cited above, teach the size of the largest free segment of the memory is determined to be allocated according to the size of the memory request. Since Schoner teach determining free segments in memory to be allocated for the macro-blocks of image, it would have been obvious to one skilled in the art to utilize the teachings of McMahon to allocate the largest free segments for the macro-blocks needed to be allocated as taught by Schoner so that as much as possible available memory are

allocated for the created set of image data to reduce memory fragmentation occurred during allocation.

As per claim 13, since both Schoner and McMahon teach keeping tracks of the free segments in the memory, and McMahon further teach the free lists also including the size of the free segment, it would have been obvious to skilled in the art to utilize the method as taught by both references such that the size of the memory request can be reduced to the size of the available memory segments so that stall condition can be avoided if not enough allocated memory during allocation.

As per claim 14, as cited above, Schoner teach the set of data are rows of macro-blocks, each macro-block are 16 x 16 in size, which is an integer multiple of lines.

As per claims 15 and 16, as cited above with reference to Fig. 4, Schoner teach allocating memory for image line by line (i.e. in unit of subset), thus, in case of decreasing the image size to fit the available free segments as discussed in claim 13, it would have been obvious to one skilled in the art that the number of lines (predetermined factor/number) can be reduced to fit the free segments, the advantage of which is to avoid stall condition during allocation.

As per claim 17, as cited above, since each subset comprises one line, and the number of lines can be reduced for allocation to fit available memory, it can be inferred that the number of lines (i.e. predetermined number) is proportional to the subsets of data (lines of image) which have not been stored in the memory yet.

Claims 18-20, which are similar in scope to claims 8-10, respectively, are thus, rejected under the same rationale.

Claim 21, which is similar in scope to claim 11, is thus rejected under the same rationale.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hau H. Nguyen whose telephone number is: 571-272-7787. The examiner can normally be reached on MON-FRI from 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kee Tung can be reached on (571) 272-7794.

The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

H. Nguyen

8/22/2007

A handwritten signature in black ink, appearing to read 'K. M. Tung', with a long, sweeping horizontal stroke extending to the right.

KEE M. TUNG
SUPERVISORY PATENT EXAMINER